

Customer : CU-DAR001 Dart Helicopters Services		Drawing Name : SHORT STEP ASSEMBLY	
Job Number : 31406			
Estimate Number : 11999			
P.O. Number : N/A		Part Number : D350591122	
This Issue : 3/21/2007	S.O. No. : N/A	Drawing Number : D2351 REV E	
Prsht Rev. : NC		Project Number : N/A	
First Issue : N/A	Type : LARGE FAB ASSY	Drawing Revision : E	
Previous Run : 30069		Material : N/A	
Written By : <u>[Signature]</u>		Due Date : 4/15/2007	Qty: 6 Um: Each
Checked & Approved By : <u>[Signature]</u>			
Comment : Est Rev: E 02.10.21	Re-format; Incorporated D2351-041 IPP K		
J/RF			

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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K-3 07.04.02.

Comment: DOCUMENT CONTROL

Photocopy bluefile and type labels as per PPP D350-591-122 CHG003

C 207104/05 (b)

2.0 D2244116 Step-Extrusion



Comment: Qty.: 0.5000 Each(s)/Unit Total : 3.0000 Each(s)

Pick:

B 28216

Qty	Part Number	Description	Batch
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0.5 D2244-116 Extrusion

 ~~$330069 = 4$~~
 ~~$331406 = 2$~~

FF 07-04-02

3.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1
-----	-------------	------------------------------



Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2244-128 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G

1 set up

2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets.

FF 07-04-02

4.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

5.0 BENDING BENDING MACHINE



Comment: BENDING MACHINE

Bend as per dwg

EL 7-4-2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/21/2007 2:00:36 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 31406

Part Number: D350591122

Job Number:



Seq. #:

Machine Or Operation:

Description:

6.0

QC5

INSPECT WORK TO CURRENT STEP



1st up
b

Comment: INSPECT WORK TO CURRENT STEP

DP 7-4-3

7.0

D28502

End Bracket



Comment: Qty.: 1.0000 Each(s)/Unit Total: 6.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2850-2 End Bracket 310952

X

SE. 07.04.04

8.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Fwd and Aft end for welding

SE. 07.04.04

2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033

SE. 07.04.04

A/R Aluminum Rod M102225

3-Do not Grind Flush

SE. 07.04.04

9.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

07/04/04 (6)

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07-04-04

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

FF 07-04-04

12.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

SE. 07.04.04

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 31406

Part Number: D350591122

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

D2582

Hi-Skid Step Leg Ass'y



Comment: Qty.: 1.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2582

Step Leg Assy

330813

SE. 07.04.04 6

14.0

MS20600AD4W3

Cherry Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total : 96.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W3 Rivet

M14393

SE. 07.04.04 6

15.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Rivet Leg Assembly as per Dwg D2351

SE. 07.04.04 6

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

20704.04

17.0

D267334

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2673-34 End Plate

325396

SE. 07.04.04 6

18.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld Fwd End Plate per QSI 004 & Dwg D2351

A/R

Aluminum Rod M100237

2-Grind end plate flush.

SE. 07.04.04 6
SE. 07.04.04 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/21/2007 2:00:37 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 31406

Part Number: D350591122

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

07/04/05 6

20.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/04/05 (B)

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch up Alodine

ES/FL 07/04/05 (6)

22.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M/103706 07/04/05 (6x)

23.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk per Dwg D2351 and QSI 005 4.4

Batch: m/103707

FL 07/04/05 (6)

24.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FL 07/04/05 (E)

25.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

26.0

D22301

Mounting Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch
1 D2230-1 Mounting Lug B30155

07/04/05 S9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/21/2007 2:00:37 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 31406

Part Number: D350591122

Job Number:



Seq. #:

Machine Or Operation:

Description :

27.0

D22303

Mounting Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

1 D2230-3 Mounting Lug **B30273**

28.0

D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total : 3.6000 f(s)

Pick:

Packing KitQtyPart Number Description Batch

1 D2856-400 7.20" Abrasion Strip **B29850**

29.0

AN337A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

2 AN3-37A Bolt **M14478**

30.0

AN413A

Bolt



Comment: Qty.: 3.0000 Each(s)/Unit Total : 18.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

3 AN4-13a Bolt **M103363**

31.0

AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 24.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

4 AN960JD10 Washer **M103641**

32.0

AN960JD416

Washer



Comment: Qty.: 6.0000 Each(s)/Unit Total : 36.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

6 AN960JD416 Washer **M102929**

7/4/5 SQ

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ _____ Date: 07/04/05

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/21/2007 2:00:37 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 31406

Part Number: D350591122

Job Number:



Seq. #:

Machine Or Operation:

Description :

33.0

MS21042L3

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

2 MS21042L3 Nut (or -3) M102659

34.0

MS21042L4

Nut



Comment: Qty.: 3.0000 Each(s)/Unit Total : 18.0000 Each(s)

Pick:

Packing KitQtyPart Number Description Batch

3 MS21042L4 Nut (or -4) M103914

7/4/5 SA

35.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

C207104105 (6)

27/4/05 (6)

36.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-122

Location: _____

PPP Rev: C

7/4/5

SA

37.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

C207104105 (6)

Job Completion



C207104105

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

*cut per drawing

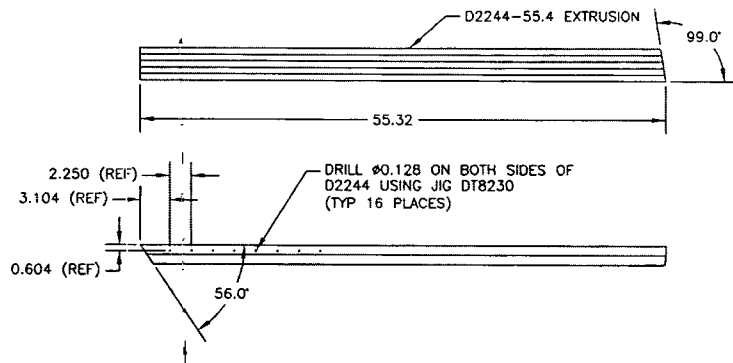
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RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 31406

RELEASED
05.11.28

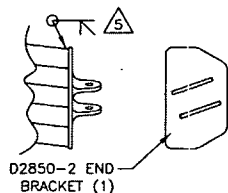
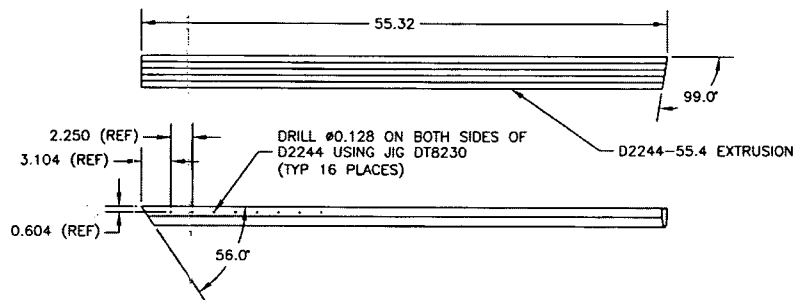
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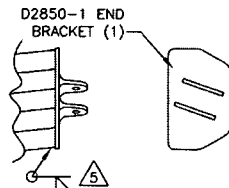
**D2351-2 CUTTING/DRILLING DETAIL
RIGHT STEP**



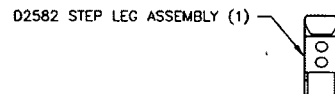
**D2351-1 CUTTING/DRILLING DETAIL
LEFT STEP**



DETAIL A
SCALE: 1:4



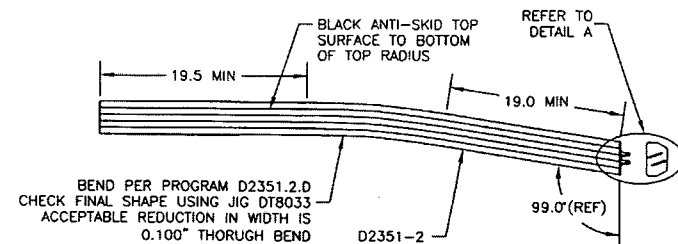
DETAIL B
SCALE: 1:4



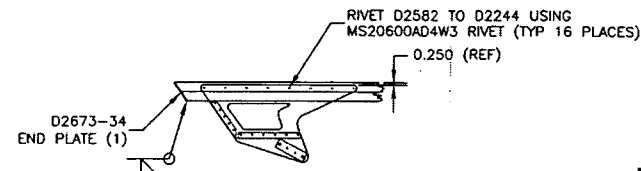
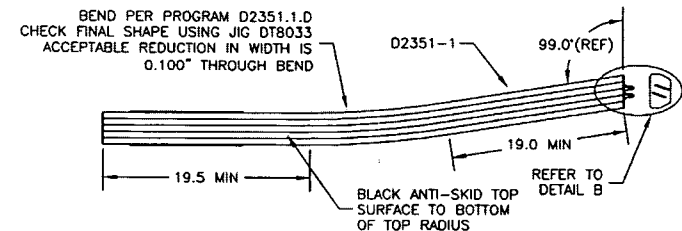
GENERAL NOTES

- 1) WELD PER DART QSI 004
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
 - 3) ALL DIMENSIONS ARE IN INCHES
 - 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- ⚠ CHAMFER D2244 EXTRUSION 0.075"x45" BEFORE WELDING D2850-1 OR D2850-2 IN PLACE. DO NOT GRIND FLUSH.

**D2351-042 BENDING/ASSEMBLY DETAIL
RIGHT STEP**



**D2351-041 BENDING/ASSEMBLY DETAIL
LEFT STEP**



RELEASED
05.11.14

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DESIGN KE	DRAWN BY PH	DART	DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E
DATE 05.11.14	TITLE HIGH FLOAT STEP ASSEMBLY	SHEET 2 OF 2	SCALE 1:12

NO. 31406
WORK ORDER
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